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ABSTRACT

Intended for use by employers for assessing how "job-ready" their particular business environment may be, the booklet provides information illustrating what physical changes could be made to allow persons with mobility limitations to enter and conduct business independently in a particular building. Illustrations along with brief explanations are given for the following: route of travel, parking, curb-ramps, walks, ramps, entry platforms/vestibules, doorways, stairs/handrails, toilet compartments, toilet rooms, work stations, operating hardware, signage, and water fountains. Also included is information on state and federal legislation and sources of information. (SBH)

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job ready?

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Very often people are ready — but jobs are not. How to make the places ready — for the people who already are, is the focus of this publication. The purpose of Project EMBER is to work with the private business community to eliminate mobility barriers which prevent work-ready disabled adults from fairly competing for employment. This project assists employers in assessing how "job-ready" their particular business environment may be. The booklet provides information illustrating what physical changes could be made to allow persons with mobility limitations to enter and conduct business independently in a particular building.

JOB-READINESS — as presented in this booklet means accessible routes of travel to and through buildings and the provision of accessible work spaces within them. Providing a continuous barrier-free sequence or linkage between the related parts, from the exterior parking, walkways and entry, into and through the related spaces, allows for free and unobstructed movement through the site. Such barrier-free considerations increase safety and are a benefit to all users, particularly persons with limited mobility.

WHO ARE THE MOBILITY LIMITED? They are people with varying abilities — and mobilities, ready to be employed but too often "handicapped" by inaccessible places of employment. They have capabilities and the basic right to equal employment opportunity. Types of mobility limitations vary with the individual; they may be either temporary or permanent. They include non-ambulatory conditions requiring the use of a wheelchair; conditions which may or may not require assistive devices such as crutches, braces or canes; limitations of coordination or stamina; as well as those restricting sight or hearing. Many such limitations are not visible and thus not recognized.

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TYPICAL BARRIERS needing removal or modification are: curbs, stairs, narrow doorways and aisles, steep ramps, inaccessible restrooms, unreachable telephones, heavy doors, and other obstructions which prevent people with mobility limitations free access to the work site. Since barrier-free legislation to date covers primarily new construction, changes to existing structures must be voluntarily made. Unfortunately, many people are unaware of the need for such changes or of what can or should be done to achieve them. Existing inaccessible structures constitute the major barrier to people with limited mobility and it is here that changes and modifications need to be made. The recycling trend has made access modification even more opportune. An entire building or site need not be made accessible at one time. However, a list of priorities indicating when and where changes are to be made can be established.

COST of building modification can range from nominal to excessive. However, when carefully considered and planned, the needed changes are usually simply achieved at relatively little cost. Such costs can often be justified when potential benefits to both user and owner are recognized.

WHY MAKE SUCH CHANGES? First of all, because it's good business. Surely it's good business to allow for a freer and safer flow of people into and within a place of business. Large shopping centers, for example, make it easier for customers to enter and shop by providing ample parking, easy entry, wide aisles, open doorways and enclosed or sheltered malls. Such features add up to increased customer comfort — and patronage. Barrier-free planning and design benefits everyone; especially physically disabled persons, who number a conservatively estimated one out of ten in the United States.

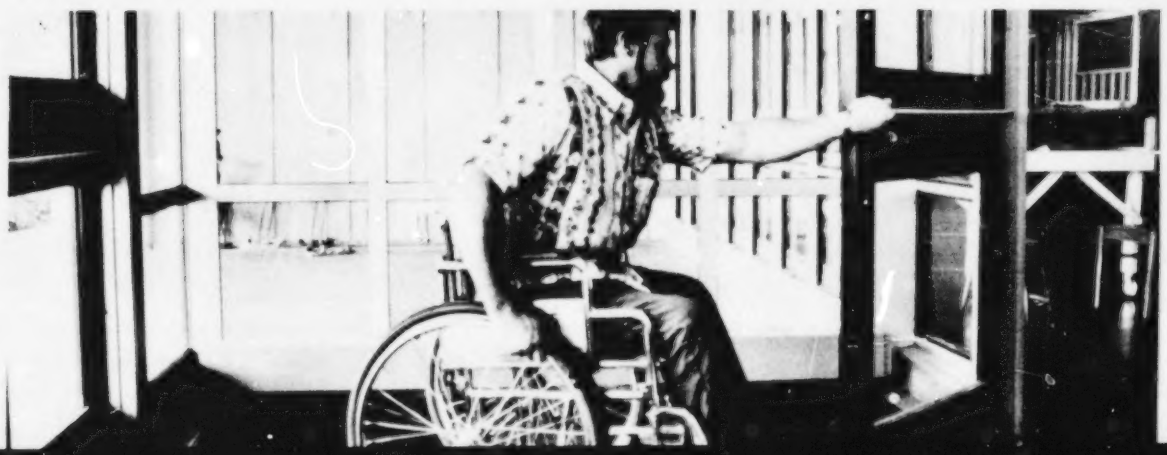
WHAT CAN BE DONE? By checking through the following illustrated access features, you may determine whether your business facilities accommodate as large a range of people as possible. By making a few basic changes could you perhaps increase your customer, service and employee potential? The following pages show what can be done, the approximate cost involved, and how to utilize the possible choices.

This booklet was made possible under a grant from HEW, Project No. 12-p-57951/0-01, to the State of Washington, **Division of Vocational Rehabilitation**, Peter Jamero, Director.

Produced by The Easter Seal Society for Crippled Children and Adults of Washington *Access-Abilities Unit*, under a contract from the Division of Vocational Rehabilitation.

human factors

Design requirements for buildings and sites have considered the "mythical average man" as the norm. This concept can no longer be considered as an adequate gauge. The increasing range and number of people with mobility limitations requires design criteria be up-dated to include this larger spectrum. Design requirements must allow persons with restricted mobility the freedom to move and function competently within the business environment.

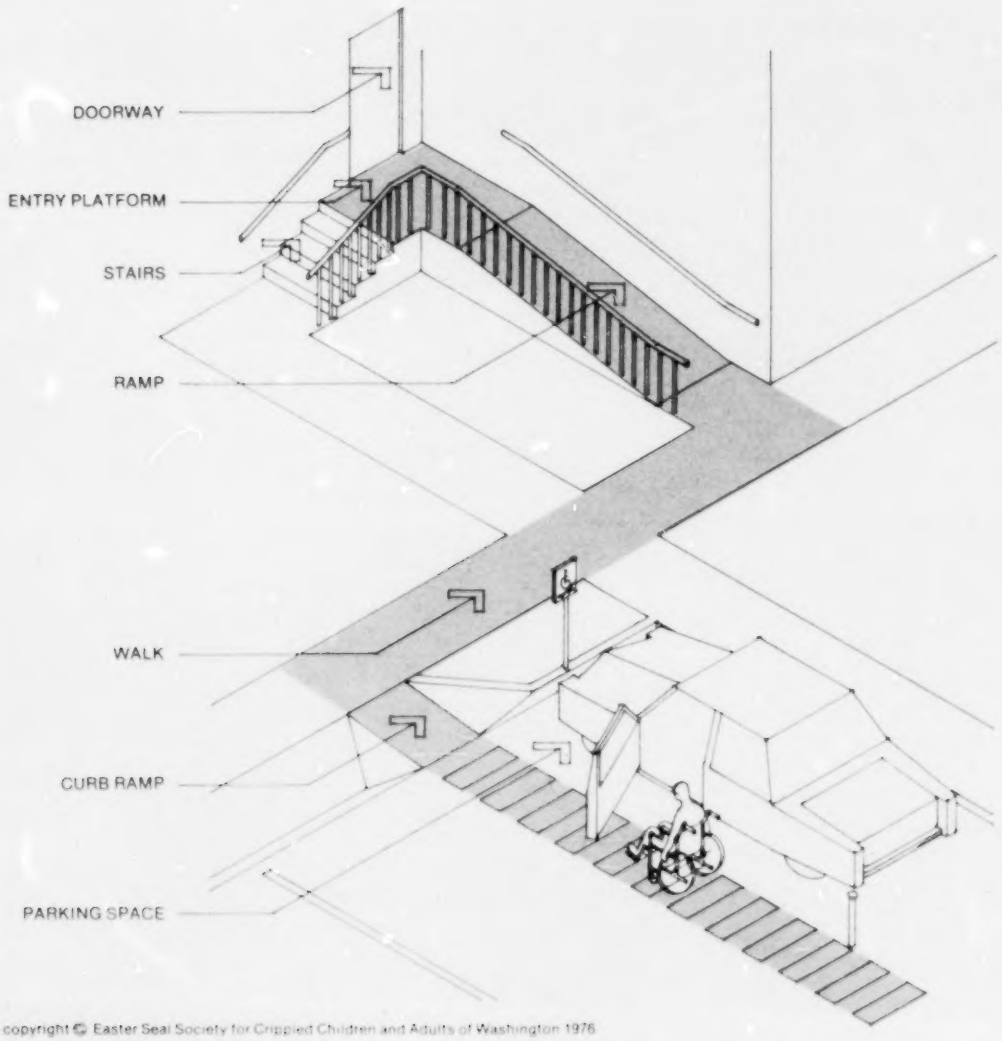


basic access

Basic access will allow most people to enter the building. On a prioritizing basis we begin with basic access, which considers and relates the total site. This means providing customers as well as employees with an accessible route of travel from the parking to the building entrance and throughout the major areas.

1 ROUTE OF TRAVEL

An accessible route of travel allows the mobility limited person a safe and unobstructed path of travel from the site entrance or parking facilities, to and through the interior of the building or buildings on the business site. It may be comprised of a network of accessible walks, curb-cuts, ramps and elevators connecting all buildings, structures, major floor areas and accessible interior facilities. Estimated costs related to the route of travel would be the sum of its components. These costs are given in the following sections.



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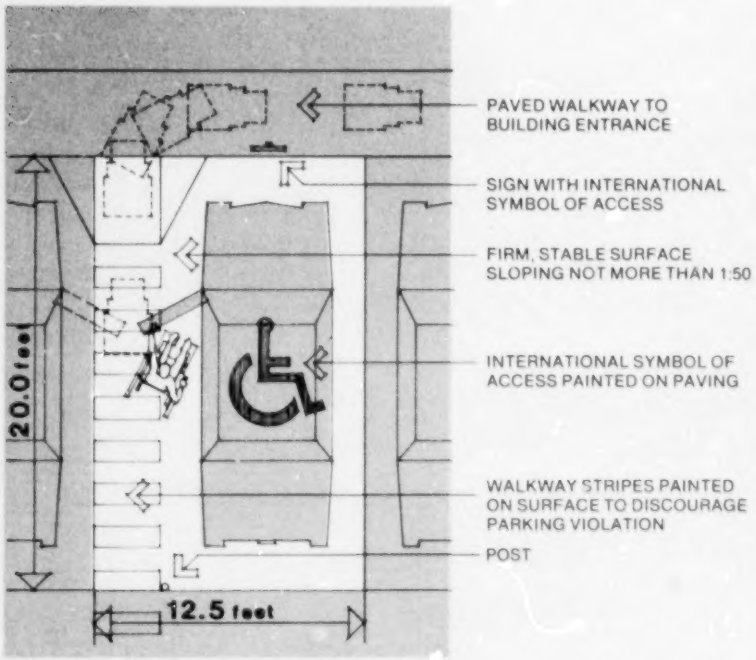
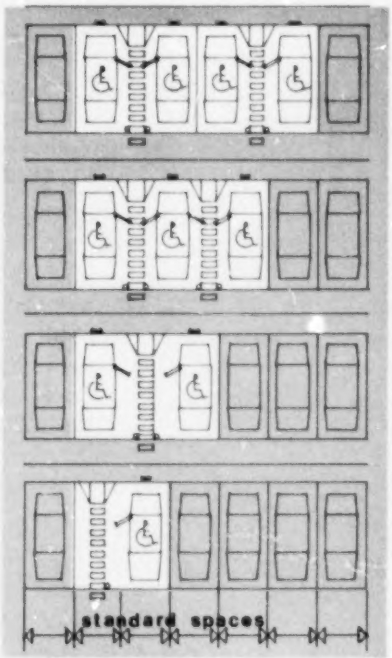
2 PARKING

Accessible parking spaces should be provided as near as possible to the building entrance. These spaces should be designated by clearly marked signage which displays the International Symbol of Access. Spaces should be level and have ramped or open access to an adjacent walkway which connects to the accessible route of travel. Estimated cost: Repainting and signage could cost between $55.00 to $180.00 per parking space using a wall mounted sign, or from $97.00 to $290.00 per space for a post mounted sign.


PAVED WALKWAY TO BUILDING ENTRANCE
SIGN WITH INTERNATIONAL SYMBOL OF ACCESS
FIRM, STABLE SURFACE SLOPING NOT MORE THAN 1:50
INTERNATIONAL SYMBOL OF ACCESS PAINTED ON PAVING
WALKWAY STRIPES PAINTED ON SURFACE TO DISCOURAGE PARKING VIOLATION
POST
20.0 feet
12.5 feet

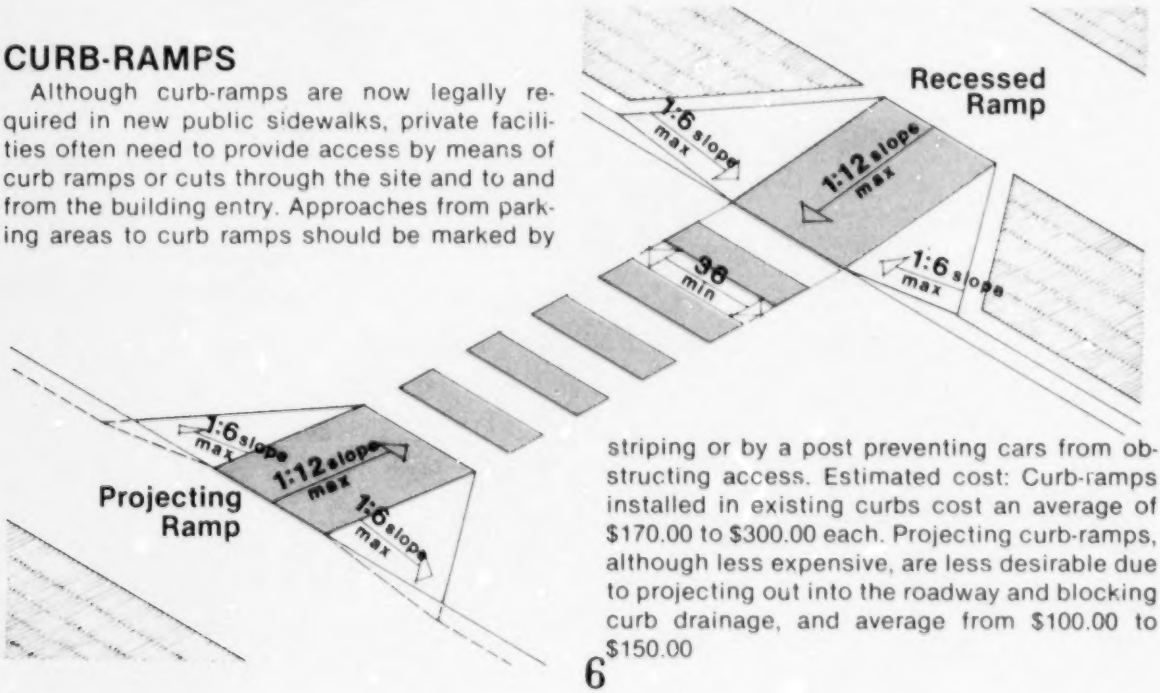
Accessible Parking Space



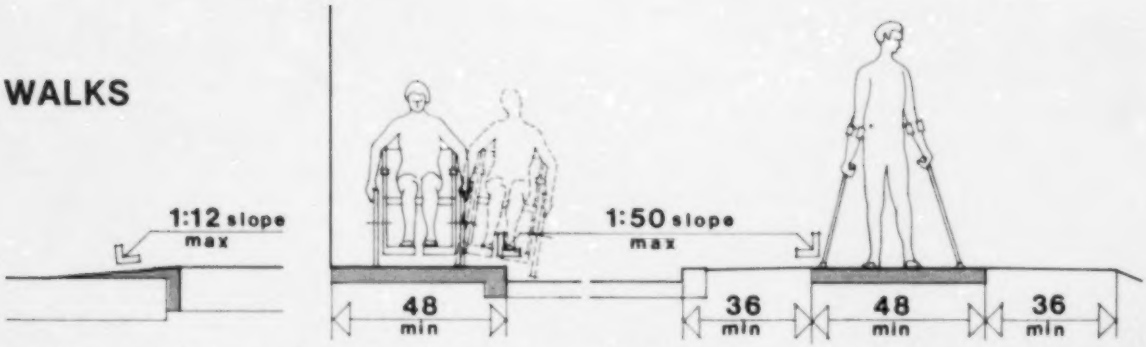
Alternatives

3 CURB-RAMPS

Although curb-ramps are now legally required in new public sidewalks, private facilities often need to provide access by means of curb ramps or cuts through the site and to and from the building entry. Approaches from parking areas to curb ramps should be marked by striping or by a post preventing cars from obstructing access. Estimated cost: Curb-ramps installed in existing curbs cost an average of $170.00 to $300.00 each. Projecting curb-ramps, although less expensive, are less desirable due to projecting out into the roadway and blocking curb drainage, and average from $100.00 to $150.00



4 WALKS

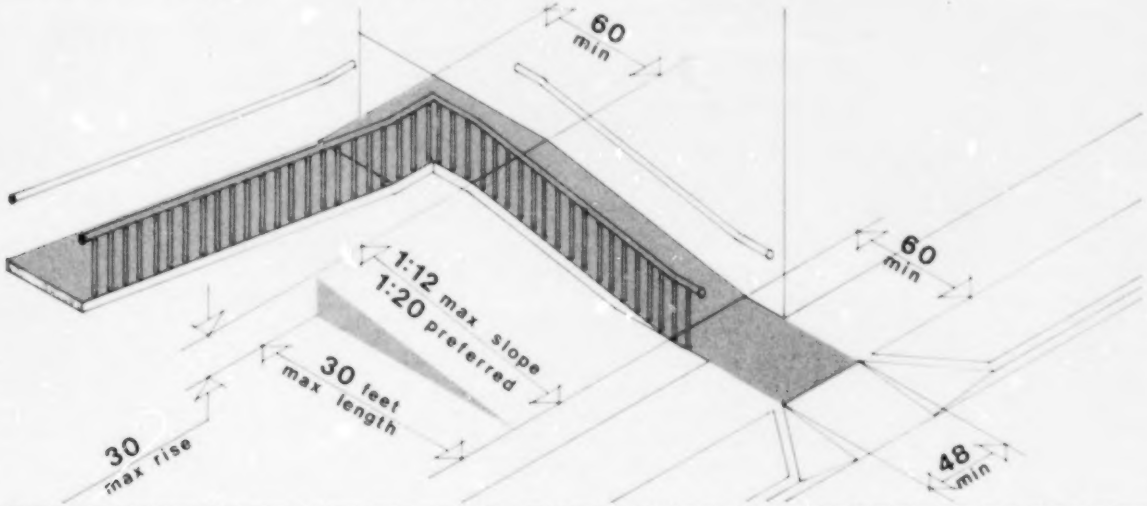


Walks should be basically level and constructed of a firm, stable, non-slip material. Abrupt edges should be repaired to avoid tripping or stopping of wheelchairs.

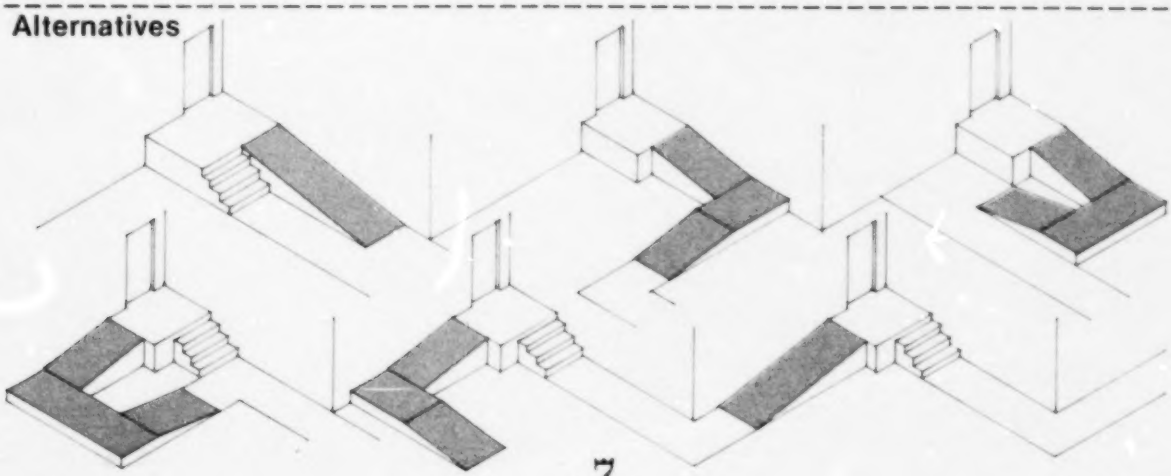
Estimated cost: Concrete walks with broomed finish could cost $55.00 per linear foot. Abrupt edges can be corrected with floor stone or asphalt ranging from $50.00 to $100.00.

5 RAMPS

Ramps with a slope greater than 1 in 20 should have handrails on both sides. If a ramp is to exceed 30 feet in length, a level reststop should be provided at each 30 foot interval. The surface of the ramp should be of a non-slip material. Space or landscaping may at times prevent straight ramp applications. Some alternative designs are shown at the bottom of the page. Estimated cost: As an estimate, a ramp replacing a 4-step, 28 inch entry in wood should cost approximately $975.00 and in concrete about $1,950.00.

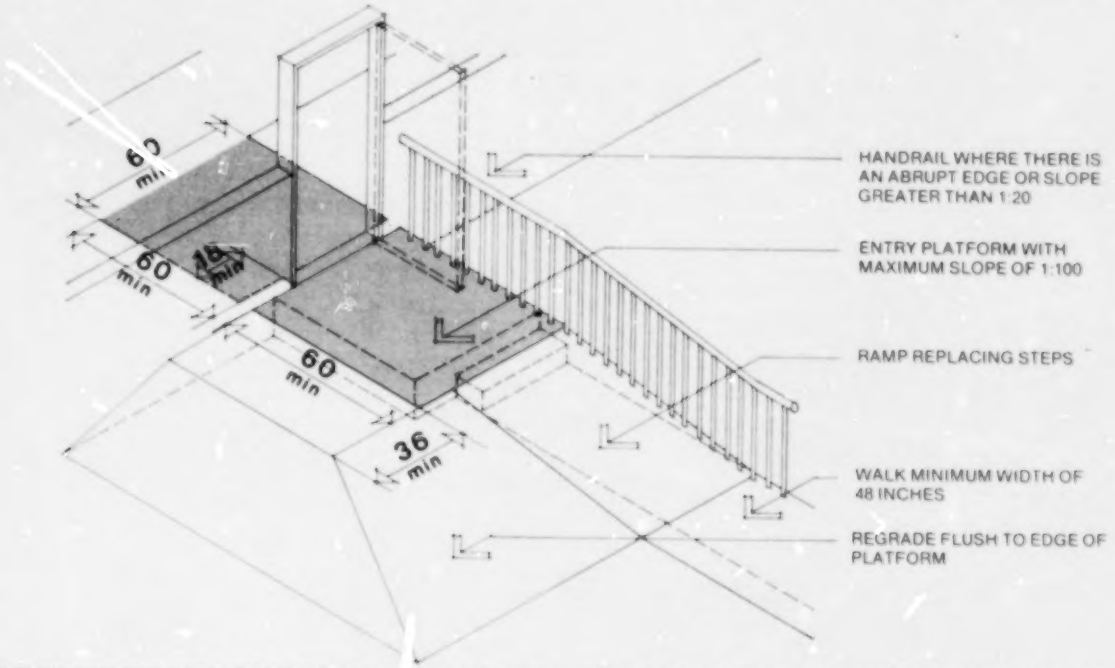


Alternatives

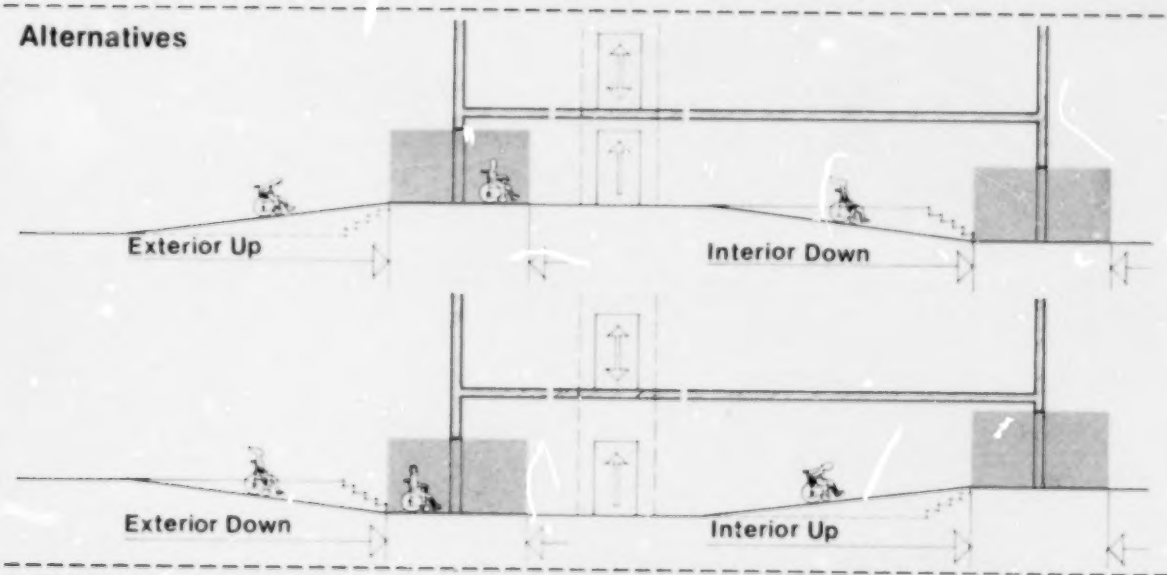


6 ENTRY PLATFORMS/VESTIBULES

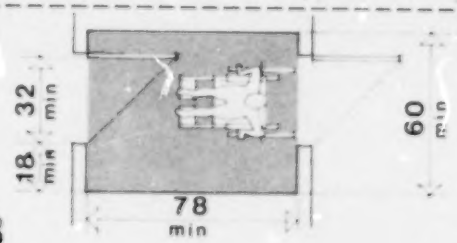
A level platform at the building entrance allows persons with restricted mobility a landing for operating the door. In order for these platforms to be usable, a minimum size of 5 feet square should be provided, with the platform extending 18 inches beyond the strike jamb of the door. Estimated cost: The extension of a 3 foot square platform to a recommended 5 foot square platform could cost between $400.00 and $600.00 for a 3 foot high platform.


60 min
60 min
18 min
60 min
36 min
HANDRAIL WHERE THERE IS AN ABRUPT EDGE OR SLOPE GREATER THAN 1:20
ENTRY PLATFORM WITH MAXIMUM SLOPE OF 1:100
RAMP REPLACING STEPS
WALK MINIMUM WIDTH OF 48 INCHES
REGRADE FLUSH TO EDGE OF PLATFORM

Alternatives



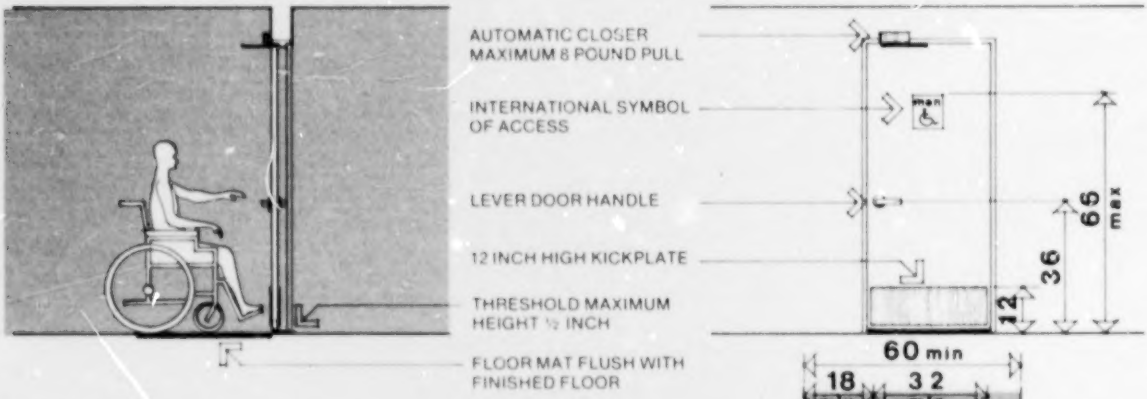
Shallow vestibules prohibit or restrict maneuvering for those with mobility limitations. A sufficiently deep vestibule permits the operation of one door at a time. Estimated cost: Enlargement of an existing vestibule with two doors set in wood and gypsum board could cost up to $600.00. Installation of a single-door, all glass, vestibule could cost around $1,000.00.



7 DOORWAYS

Doors in the accessible route of travel should be sufficiently wide to allow passage of wheelchairs and persons on crutches and should be easily operable with a pressure not to exceed 8 pounds when applied by the user.

Estimated cost: The cost of replacing a 2 foot wide hollow core door with a 3 foot wide hollow core door in a wood frame gypsum board wall, could be about $185.00. To replace a 2 foot U.L. approved fire door with a 3 foot wide U.L. approved fire door in a masonry wall might be as much as $550.00.



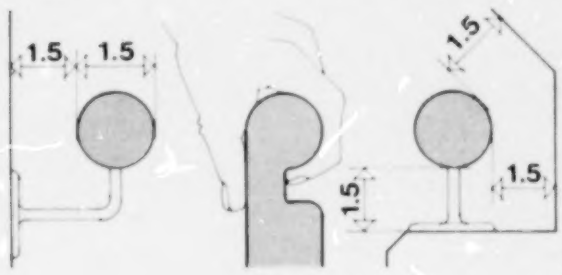
Power Operated Doors

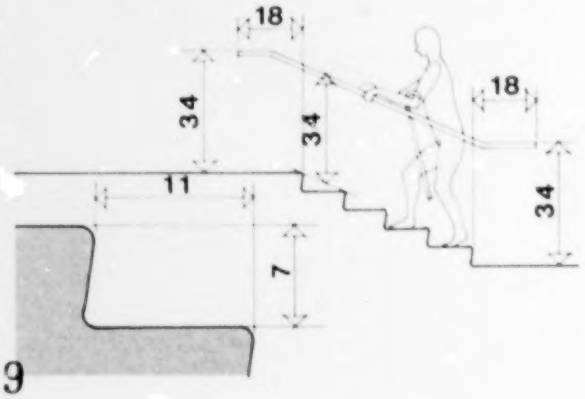
Power operated doors with treadle mats are the most desirable. Estimated cost: This type of door costs from $2,000.00 or more in new construction.

8 STAIRS/HANDRAILS

Handrails should be of the size and shape to be easily grasped. Estimated cost: To extend a handrail 18 inches on both ends should cost from $50.00 to $100.00. To replace a handrail attached to a concrete wall should be from $15.00 to $75.00 per linear foot.

Some persons with mobility limitations are able to use stairways. However, since many semi-ambulatory persons have problems with foot drag when ascending stairs, a closed riser system with the nose of the tread rounded reduces the hazard of tripping and is the preferred type. Estimated cost: To close the riser on an existing wood stairway would cost approximately $40.00 per tread and to close the risers on a steel stairway could cost about $60.00 per tread.



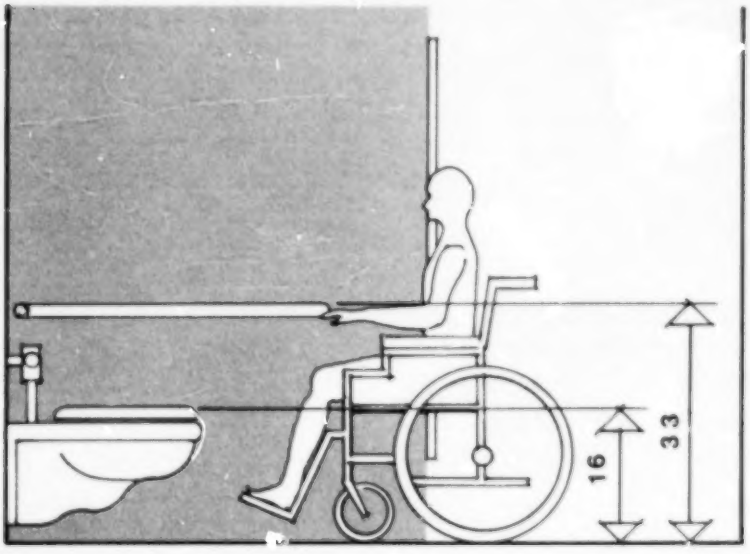


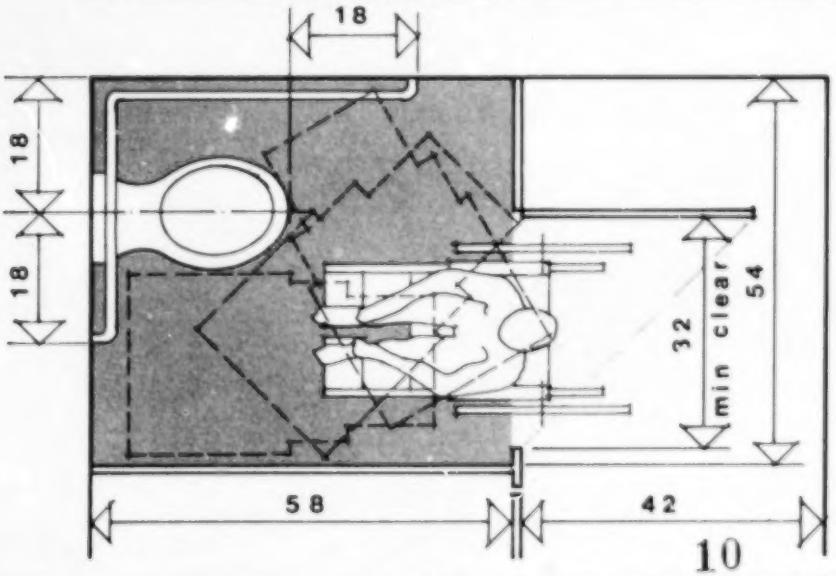
basic facilities

Basic facilities will allow most people to utilize the building and enable them to be employed there. This would be the second priority grouping which includes: toilet facilities, work stations, hardware, signage and water fountains. This often means inexpensive adaptation rather than costly replacement of existing facilities. These would be interconnected by an accessible route of travel leading from the entrance through the building to such facilities.

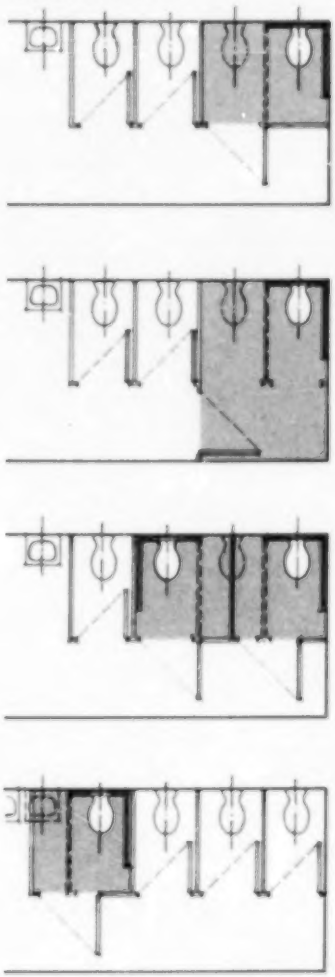
9 TOILET COMPARTMENTS

Toilet compartments for disabled persons should have sufficient depth and width to allow for needed maneuvering and should be arranged to provide lateral transfer space for those in wheelchairs. Grab bars should be wall mounted so as not to obstruct such maneuvering area. Existing standard compartments may be modified as illustrated by the alternatives shown. Estimated cost: Modification to provide accessible compartments may range from $450. to $750.00 each.



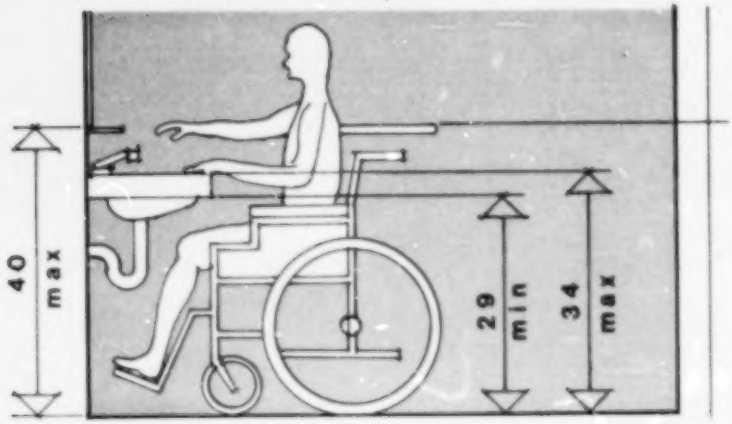


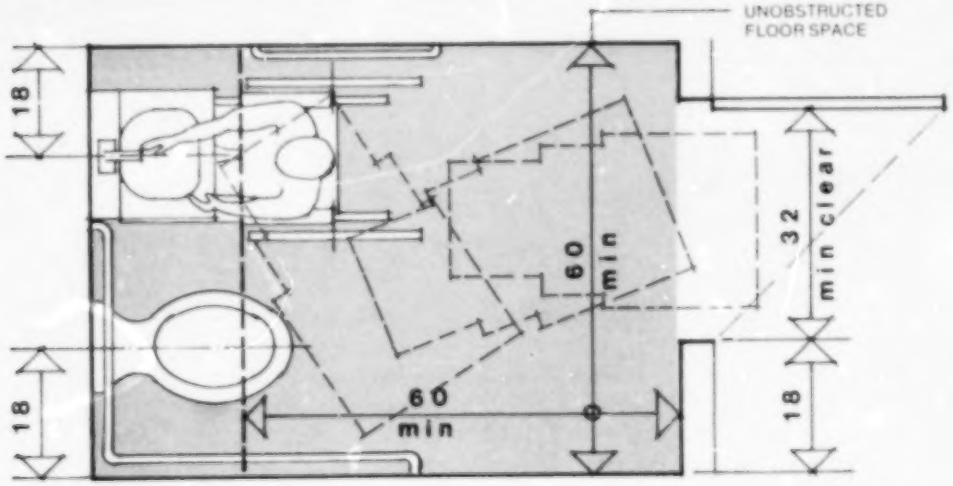
Alternatives



10 TOILET ROOMS

Toilet rooms with one or more compartment should allow sufficient maneuvering space for disabled persons. When privacy screens are provided, allowance should be made for turning space, which will vary with the direction of doorswing. Single locking toilet rooms, for use by either sex, may be an alternative to conversion of compartments in multiple use facilities. In any toilet rooms for use by disabled persons, fixtures such as mirrors, dispensers, or shelves should contain at least one each at a usable height for persons in wheelchairs. Estimated costs: Installation of a separate single toilet room usable by persons in wheelchairs and containing a lavatory, could cost $1,200.00 or more.





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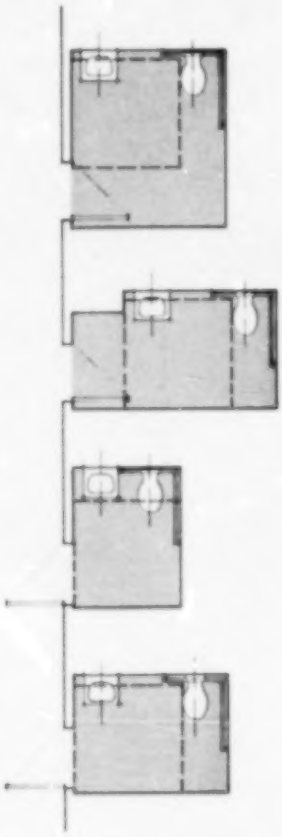
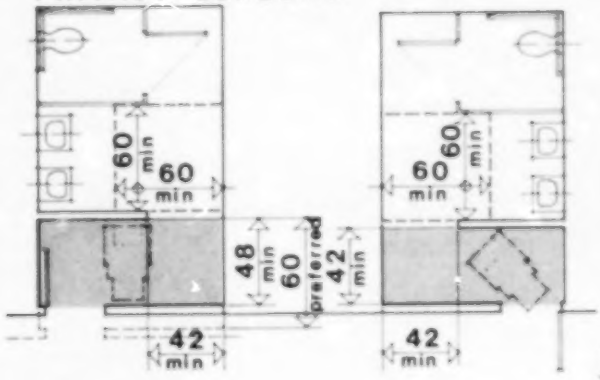
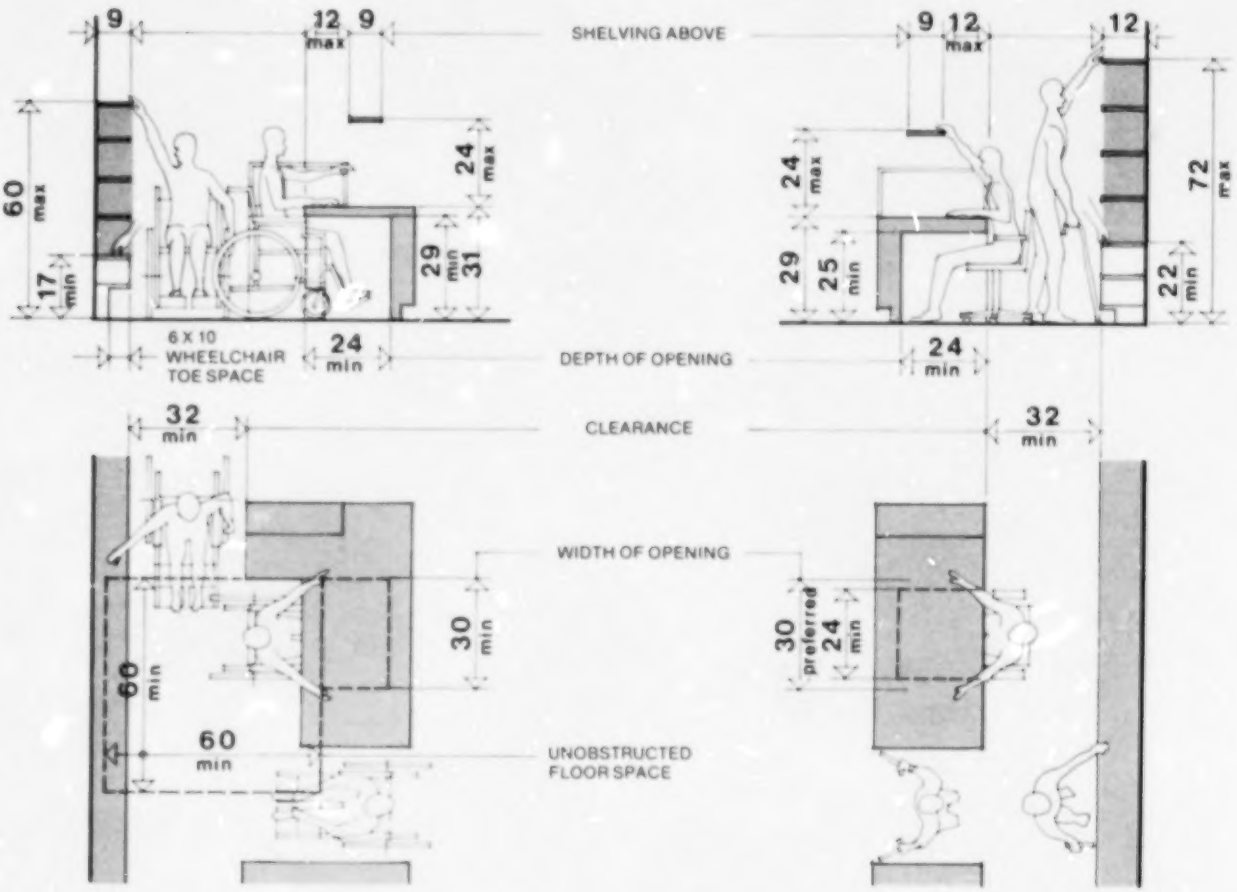


PRIVACY SCREENS



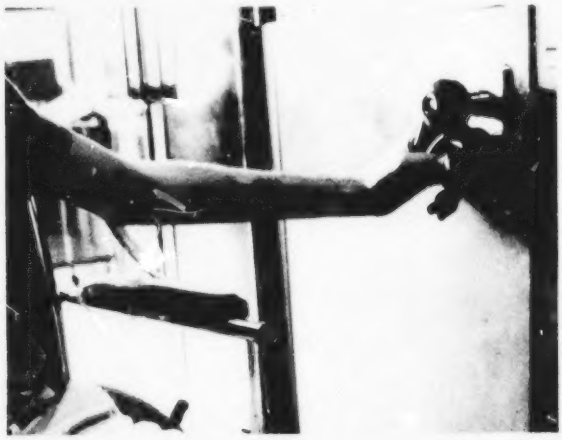
11 WORK STATIONS

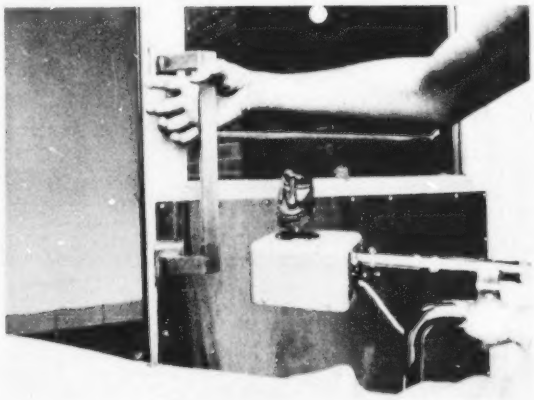
A person with impaired mobility at a work station may require changes to that station in order to adequately perform the required tasks. The design requirements for an adapted work station will in some cases be standard for each type of mobility impairment but special cases may arise that require special adaptation. It is suggested that special adaptation to work stations be made only upon the hiring of those persons and after consulting with them as to their special needs. Pictured below are some common situations and dimensions. Cost of adapting work stations is usually minimal.



12 OPERATING HARDWARE

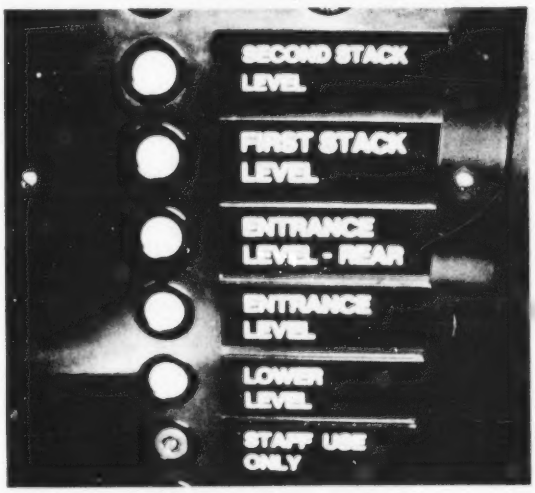
Most conventional hardware can be inexpensively adapted or replaced to serve people with limited manual dexterity or who have problems of coordination, strength or stamina. Lever type hardware on doors, lavatories and switches greatly facilitates usage for all people.





13 SIGNAGE

Signage must both identify accessible facilities and provide routing information to them. It must also be located so as to be read by the partially sighted and must have well illuminated large characters on contrasting backgrounds.



14 WATER FOUNTAINS

Water fountains must be low enough for persons with mobility limitations and must not be made inaccessible by being recessed in an alcove. An extended water fountain set at the proper height can serve most persons. Estimated cost: To lower an existing water fountain could cost between $200.00 and $300.00. To install a new lower foun.ain could cost between $300.00 and $500.00

law and resources

State Laws:

Since 1961 building standards have existed which would provide accessible structures and hence remove the major "handicap" for persons with limited mobility. However, even the incorporation of these standards (ANSI-A117.1-1961) into our laws, now in all states, has not solved the problem. This is because such laws generally address only newly constructed and public funded buildings. The majority of buildings, those existing and privately funded, still form a primary roadblock to a useful and productive life for many people. In this state, laws requiring public funded buildings to be "accessible" have existed since 1967 (RCW 70.92). In 1971 legislation was passed relating to access standards for privately funded buildings of public accommodation (RCW 70.92A). In 1975 further legislation was implemented by way of the State Building Code Act (RCW 19.27), requiring most new or major remodeled structures to meet standards of accessibility. Additionally, the State Anti-Discrimination Act (RCW 49.60) prohibits discriminatory action against handicapped persons and points up the need for equal access.

Related Federal Legislation:

PL 90-480 - Architectural Barriers Act of 1968, requiring buildings and facilities financed with Federal funds be designed and constructed or altered to be accessible to and usable by physically limited persons.

PL 93-205 - Amending PL 90-480

PL 93-112 - Rehabilitation Act of 1973

- —Section 502 establishes the National Architectural and Transportation Barriers Compliance Board to monitor and enforce PL 90-480.
- —Section 503 has Affirmative Action provisions requiring employers receiving Federal contracts in excess of $2,500, to make "reasonable accommodation" for qualified handicapped employees.

PL 93-518 - Rehabilitation Act of 1974 (amending PL 93-112)

Resources:

The following selected publications on barrier-free design provide more detailed information on making buildings and facilities accessible to disabled persons:

Barrier-Free Site Design, HUD publication, 1974. Available from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C.

Goldsmith, Selwyn. **Designing for the Disabled,** 2nd ed., New York: McGraw-Hill, 1967.

Mace, Ron L. **An Illustrated Handbook of the Handicapped Section of the North Carolina State Building Code,** 1974; and, **Accessibility Modifications,** 1976. (Both are available from N.C. Dept. of Insurance, Engineering Division, P.O. Box 26387, Raleigh, North Carolina 27611.)

STATE SOURCES OF INFORMATION:

State of Washington, Division of Vocational Rehabilitation, M/S 311, Olympia, WA 98504.

The Easter Seal Society for Crippled Children and Adults of Washington, 521 Second Avenue West, Seattle, WA 98119.

NATIONAL SOURCES OF INFORMATION:

The National Easter Seal Society for Crippled Children and Adults, 2023 West Ogden Avenue, Chicago, Illinois 60612.

The President's Committee on Employment of the Handicapped, Committee on Barrier-Free Design, Washington, D.C. 20210.

National Center for a Barrier Free Environment, 8401 Connecticut Avenue, Washington, D.C. 20015.

ember eliminate mobility barriers employ rehabilitants

THE INTERNATIONAL SYMBOL OF ACCESS

This symbol denotes accessible buildings or facilities.

When displayed at the entrance to a building it signifies the building incorporates features providing basic access to people with limited mobility — and can thus be used by most everyone.

The symbol may also be displayed within a building to identify specific features useable by people with mobility limitations, even though the entire building may not qualify.

Further information and criteria on use of this symbol may be obtained from: The Division of Vocational Rehabilitation, M/S 311, Olympia, Washington 98504, or, The Easter Seal Society for Crippled Children and Adults of Washington, 521 Second Avenue West, Seattle, Washington 98119.